

In the claims:

1. A tissue scaffold implant device, comprising:
a foam tissue scaffold component having a pore
structure effective to facilitate tissue infiltration
and growth into the foam tissue scaffold; and
a fixation component,
wherein the foam tissue scaffold component is fixedly
attached to the scaffold fixation component via partial
encapsulation of the fixation component by the foam
tissue scaffold component.

2. The device of claim 1 wherein the fixation
component comprises tissue scaffold support means and
anchor means and the foam tissue scaffold component
substantially encapsulates the tissue scaffold support
means.

3. The device of claim 1 wherein the foam scaffold
component comprises a lyophilized polymer.

4. The device of claim 3 wherein the lyophilized
polymer is bioabsorbable.

5. The device of claim 4 wherein the fixation
component comprises a bioabsorbable polymer.

6. The device of claim 4 wherein the fixation
component comprises a non-bioabsorbable polymer.

7. The device of claim 5 wherein the bioabsorbable polymer is selected from the group consisting of aliphatic polyesters, poly(amino acids), copoly(ether-esters), polyalkylene oxalates, polyamides, tyrosine-derived polycarbonates, poly(iminocarbonates), polyorthoesters, polyoxaesters, polyamidoesters, polyoxaesters containing amine groups, poly(anhydrides), polyphosphazenes and biopolymers.

8. The device of claim 7 wherein the aliphatic polyesters are selected from the group consisting of homopolymers and copolymers of lactide, glycolide, ϵ -caprolactone, p-dioxanone (1,4-dioxan-2-one), trimethylene carbonate (1,3-dioxan-2-one), alkyl derivatives of trimethylene carbonate, δ -valerolactone, β -butyrolactone, γ -butyrolactone, ϵ -decalactone, hydroxybutyrate, hydroxyvalerate, 1,4-dioxepan-2-one, 1,5-dioxepan-2-one, 6,6-dimethyl-1,4-dioxan-2-one, 2,5-diketomorpholine, pivalolactone, α,α -diethylpropiolactone, ethylene carbonate, ethylene oxalate, 3-methyl-1,4-dioxane-2,5-dione, 3,3-diethyl-1,4-dioxan-2,5-dione and 6,8-dioxabicyclooctane-7-one.

9. The device of claim 8 wherein the aliphatic polyesters are elastomeric.

10. The device of claim 7 wherein the biopolymers are selected from the group consisting of hyaluronic acid,

collagen, recombinant collagen, cellulose, elastin, alginates, chondroitin sulfate, chitosan, chitin, keratin and silk.

5 11. The device of claim 1 wherein the pore structure is open-cell.

12. The device of claim 1 wherein the pores have an average diameter of from about 10 to about 1,000 microns.

13. The device of claim 2 wherein the scaffold support means comprises through-holes.

14. The device of claim 1 further comprising a reinforcing component.

15. A method of making a tissue scaffold implant device, comprising:

20 placing a fixation component within a mold of selected configuration, in a selected position and orientation,

adding to the mold containing the fixation component a polymer solution comprising a selected polymeric material dissolved in a suitable solvent therefore,

25 separating the polymer solution in the mold into a solvent phase and a polymer phase; and

removing the solvent phase from the mold,

thereby providing a foam tissue scaffold component that at least partially encapsulates the fixation component, thereby providing fixed attachment of the foam tissue scaffold component to the fixation component.

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16. The method of claim 15 wherein the fixation component comprises scaffold support means and anchor means, the scaffold support means is positioned within the mold, the polymer solution substantially encapsulates the scaffold support means, and wherein upon phase separation and solvent removal, the foam tissue scaffold component produced thereby substantially encapsulates the scaffold support means, thereby providing the fixed attachment of the foam tissue scaffold component to the fixation component.

17. The method of claim 15 wherein the phase separation and solvent removal are accomplished by lyophilization.

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18. The method of claim 15 further comprising placing a reinforcing component into the mold prior to placing the fixation component into the mold, such that the fixation component is in contact with the reinforcing component.

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19. The process of claim 15 wherein the polymer material is selected from the group consisting of aliphatic polyesters, poly(amino acids), copoly(ether-esters), polyalkylene oxalates, polyamides, tyrosine-derived polycarbonates, poly(iminocarbonates),

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polyorthoesters, polyoxaesters, polyamidoesters, polyoxaesters containing amine groups, poly(anhydrides), polyphosphazenes and biopolymers.

5 20. The process of claim 19 wherein the aliphatic polyesters are selected from the group consisting of homopolymers and copolymers of lactide, glycolide, ϵ -caprolactone, p-dioxanone (1,4-dioxan-2-one), trimethylene carbonate (1,3-dioxan-2-one), alkyl derivatives of trimethylene carbonate, δ -valerolactone, β -butyrolactone, γ -butyrolactone, ϵ -decalactone, hydroxybutyrate, hydroxyvalerate, 1,4-dioxepan-2-one, 1,5-dioxepan-2-one, 6,6-dimethyl-1,4-dioxan-2-one, 2,5-diketomorpholine, pivalolactone, α,α -diethylpropiolactone, ethylene carbonate, ethylene oxalate, 3-methyl-1,4-dioxane-2,5-dione, 3,3-diethyl-1,4-dioxan-2,5-dione, and 6,8-dioxabicyclooctane-7-one.

20 21. The process of claim 20 wherein the aliphatic polyesters are elastomeric.

25 22. The process of claim 19 wherein the biopolymers are selected from the group consisting of hyaluronic acid, collagen, recombinant collagen, cellulose, elastin, alginates, chondroitin sulfate, chitosan, chitin, keratin and silk.